

REMARKS

This amendment is responsive to the Office Action dated September 18, 2008. Applicant has amended claims 1-11 and added claim 33. Claims 1-11 and 33 are pending.

Claim Rejection Under 35 U.S.C. § 102

In the Office Action, the Examiner rejected claims 1-2 and 4-10 under 35 U.S.C. § 102(b) as being anticipated by Pfister et al. (US 6,415,627). Applicant respectfully traverses the rejection to the extent such rejection may be considered applicable to the amended claims. Pfister et al. fails to disclose each and every feature of the claimed invention, as required by 35 U.S.C. § 102(b), and the Examiner has not provided a rational reason one of ordinary skill in the art would modify the teachings of Pfister et al. to include such features.

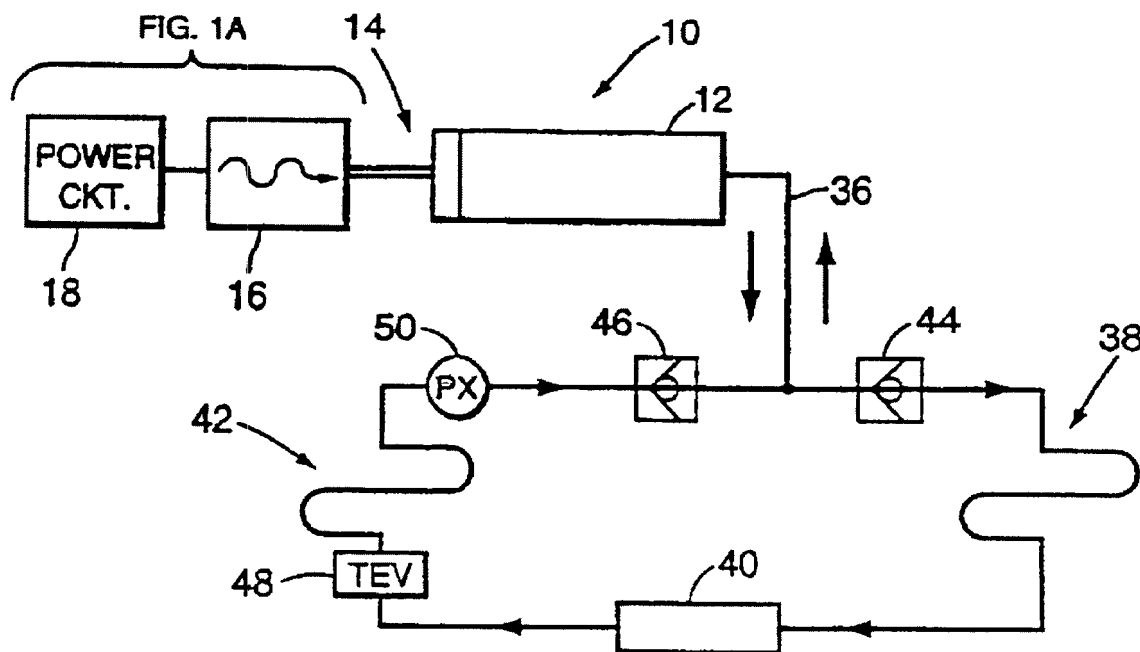
As amended, independent claim 1 recites a sorption tube comprising a generator section connected via a first passage to a condenser section, wherein the tube contains a sorbent material within its generator section and a quantity of sorbate fluid, wherein the condenser section is connected by a second passage to an evaporator section, the generator, condenser, and evaporator sections being so arranged or interlinked such that liquid in the condenser section is encouraged to flow to the evaporator section and discouraged from flowing to the generator section and the quantity of sorbate fluid and pressure within the tube is such that, when the sorbent material is saturated with adsorbed or absorbed sorbate and at its lowest anticipated operating temperature, the evaporator section is substantially filled with sorbate liquid.

In the rejection of claim 1, the Examiner cited FIG. 1 of Pfister et al. as teaching a sorption module including a generator section connected via a first passage to a condenser section, wherein the condenser section is connected by a second passage to an evaporator section.

Following the amendment to claim 1, claim 1 recites a sorption *tube* rather than a sorption *module*. Pfister et al. fails to disclose a sorption tube as claimed. For example, a sorption tube is considerably simpler in structure than that in the system disclosed in Pfister et al. In contrast to the sorption tube recited in claim 1, Pfister et al. discloses a refrigeration system including a

sorber (12) connected to a loop (via line 36) including a condenser (38), a receiver or refrigerant reservoir (40) and an evaporator (42).¹ For reference, FIG. 1 of Pfister et al. is reproduced below.

FIG. 1



As clearly shown in FIG. 1 above, Pfister et al. does not teach or enable structure in the form of a sorbent tube nor is there any teaching that would lead the skilled person to consider providing the Pfister system in the form of a tube as recited in claim 1.

In addition, claim 1 recites that when the sorbent material is saturated with adsorbed or absorbed sorbate and at its lowest anticipated operating temperature, the evaporator section is substantially filled with sorbate liquid. In the rejection of claim 1, the Examiner cited Pfister et al. column 5, lines 57-67 and column 6 lines 1-39 as disclosing this feature. However, the Examiner failed to provide any explanation for this characterization in the rejection of claim 1, and Applicant finds no such teaching in this portion of Pfister et al. or elsewhere.

Instead, Pfister et al. teaches that TEV 48 (a flow-control valve) selectively discharges liquid sorbate into evaporator 42 during a cooling cycle, and that TEV 48 is used to control

¹ Pfister et al., column 5, lines 1-8 and column 5, lines 43-56.

pressure in evaporator 42 as sensed by pressure sensor 50.² Such teachings do not provide an indication of whether evaporator 42 is substantially filled with sorbate liquid as recited in claim 1, but only indications that liquid sorbate enters evaporator 42 and gaseous sorbate is present at pressure sensor 50, upstream of evaporator 42.

In addition, in the “Response to Arguments” section of the Office Action, the Examiner cited, more specifically, column 5, lines 57-67. The Examiner then stated that, “The evaporator (42) is designed to have sorbate at a specific operating temperature including the lowest, the meeting the metes and bounds of the claim limitations.” This statement appears to show that the Examiner failed to consider that the language in claim 1 that specifies that the evaporator section is substantially filled with sorbate liquid. Applicant does not dispute that Pfister et al. teaches that evaporator 42 may be filled with sorbate. Instead, Applicant strenuously disputes the Examiner’s characterization that Pfister et al. teaches that evaporator 42 is filled with liquid sorbate at any time, much less, “when the sorbent material is saturated with adsorbed or absorbed sorbate and at its lowest anticipated operating temperature,” as specified by Applicant’s claim 1.

Applicant notes that when the sorbent material is saturated with adsorbed or absorbed sorbate, as recited in claim 1, this represents the point in the repeating heating and cooling cycle at which the greatest amount of the sorbate is held by the sorbent. This point in a heating and cooling cycle also represents the lowest amount of sorbate present in the rest of the system, including the condenser section and the evaporator section, at any point during the heating and cooling cycle.

As taught in paragraph [0079] of Applicant’s specification as published (US 2005/0252235), keeping the evaporator module filled with liquid prevents wasteful heating of the evaporator module through condensation. However, the occurrence of condensation in evaporator 42 of the system disclosed by Pfister et al. would not be a concern to one of ordinary skill in the art. In the refrigeration system shown in FIG. 1 of Pfister et al., check valve 46 prevents any flow of a gaseous sorbate into evaporator 42 from sorber 12. In addition, receiver 40 and the line running into the evaporator 42 would be filled with liquid sorbate provided by condenser 38 such that only liquid sorbate could flow into evaporator 42. In contrast, Applicant

² Pfister et al., column 6, lines 13-30.

discloses a system in which an evaporator section is directly connected to a condenser section such that condensation in the evaporator could be an issue, e.g., as discussed in paragraph [0079] of Applicant's specification as published.

In this manner, Applicant submit that the features of claim 1 are not taught by Pfister and Applicant can foresee no rational reason one of ordinary skill in the art would have found it obvious to modify the refrigeration system disclosed by Pfister et al. et to include the feature of when the sorbent material is saturated with adsorbed or absorbed sorbate and at its lowest anticipated operating temperature, the evaporator section is substantially filled with sorbate liquid as recited in claim 1.

Dependent claims 2 and 4-10 are patentable for at least the reasons independent claim 1 is patentable. In view of the clear differences between the disclosure of Pfister et al. and the subject matter of independent claim 1, Applicant reserves further comment with respect to dependent claims 2 and 4-10.

Pfister et al. fails to disclose each and every limitation set forth in claims 1-2 and 4-10. For at least these reasons, the current rejection fails to demonstrate anticipation of Applicant's claims 1-2 and 4-10 under 35 U.S.C. § 102(b). Withdrawal of this rejection is requested.

Claim Rejection Under 35 U.S.C. § 103

In the Office Action, the Examiner rejected claim 3 under 35 U.S.C. 103(a) as being unpatentable over Pfister et al. in view of Basiulis (US 3,884,296). In addition, the Examiner rejected claim 11 under 35 U.S.C. 103(a) as being unpatentable over Pfister et al. Applicant respectfully traverses the rejections to the extent such rejections may be considered applicable to the claims as amended. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Basiulis fails to overcome the deficiencies of Pfister et al. as discussed with respect to independent claim 1. For example, Basiulis fails to disclose the feature of when the sorbent material is saturated with adsorbed or absorbed sorbate and at its lowest anticipated operating temperature, the evaporator section is substantially filled with sorbate liquid as recited by

independent claim 1. For this reasons, claims 3 and 11 are patentable for at least the reasons independent claim 1 is patentable.

In addition, dependent claims 3 and 11 recite additional features not found in or suggest by the cited references. For example, claim 11 recites the sorption tube of claim 1, further comprising a porous plug of inert material within the second passage. In the rejection of claim 11, the Examiner cited Pfister et al. as disclosing the feature of end plug 68. The Examiner correctly stated that Pfister et al. fails to disclose end plug 69 may be located in a passage that connects the condenser section to an evaporator section [the second passage as recited in claim 11]. The Examiner concluded, however, that it would have been obvious to locate the end plug in the second passage to control the flow of liquid from the condenser to the evaporator and prevent any excess heating or cooling from conducting across the passage in the event of a system malfunction.

Applicant disagrees with the Examiner's conclusion of obviousness with respect to the feature of a porous plug of inert material within the second passage for a variety of reasons. First, Pfister et al. discloses end plug 68 in the context of "a coaxial waveguide applicator."³ In this context, Pfister et al. fails to provide any suggestion or use of end plug 68 in a passage that connects the condenser section to an evaporator section. Furthermore, Pfister et al. discloses that TEV 48 controls flow between condenser 38 and evaporator 42.⁴

In addition, the Examiner's motivation of, "preventing any excess heating or cooling from conducting across the passage in the event of a system malfunction" is not self-apparently logical, and the Examiner has not cited any support for this reasoning. For example, the Examiner has not explained what type of system malfunction could occur, how such a system malfunction could resulting any excess heating or cooling conducting across the passage, or why one would seek to prevent any excess heating or cooling from conducting across the passage in the event of a system malfunction. Without such support, the motivation to modify the disclosure of Pfister et al. as provided by the Examiner has no rational value.

³ Pfister et al., column 13, lines 47-59.

⁴ Pfister et al., column 6, lines 13-30.

In view of the clear differences between the disclosure of the cited references and the subject matter of independent claim 1, Applicant reserves further comment with respect to dependent claims 3 and 11.

For at least these reasons, the current rejection fails to establish a prima facie case for non-patentability of Applicant's claims 3 and 11 under 35 U.S.C. § 103(a). Withdrawal of this rejection is requested.

New Claim

Applicant has added claim 33 to the pending application. The applied references fail to disclose or suggest the inventions defined by Applicant's new claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed inventions. As one example, the references fail to disclose or suggest a sorption tube that does not include a wherein the evaporator section of the tube directly connects to the condenser section of the tube without separation by a valve. Quite the contrary, Pfister et al. teaches a flow control valve separates a condenser from an evaporator. No new matter has been added by claim 33.

CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Applicant does not acquiesce with any of the Examiner's current rejections or characterizations of the prior art, and reserves the right to further address such rejections and/or characterizations. Please charge any additional fees or credit any overpayment to deposit account number 50-1778.

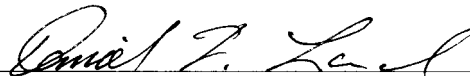
The Examiner is invited to telephone the below-signed attorney to discuss this application.

Date:

1-20-2009

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